

JPRS 75961

30 June 1980

Japan Report

No. 101

FBIS

FOREIGN BROADCAST INFORMATION SERVICE

NOTE

JPRS publications contain information primarily from foreign newspapers, periodicals and books, but also from news agency transmissions and broadcasts. Materials from foreign-language sources are translated; those from English-language sources are transcribed or reprinted, with the original phrasing and other characteristics retained.

Headlines, editorial reports, and material enclosed in brackets [] are supplied by JPRS. Processing indicators such as [Text] or [Excerpt] in the first line of each item, or following the last line of a brief, indicate how the original information was processed. Where no processing indicator is given, the information was summarized or extracted.

Unfamiliar names rendered phonetically or transliterated are enclosed in parentheses. Words or names preceded by a question mark and enclosed in parentheses were not clear in the original but have been supplied as appropriate in context. Other unattributed parenthetical notes within the body of an item originate with the source. Times within items are as given by source.

The contents of this publication in no way represent the policies, views or attitudes of the U.S. Government.

PROCUREMENT OF PUBLICATIONS

JPRS publications may be ordered from the National Technical Information Service, Springfield, Virginia 22161. In ordering, it is recommended that the JPRS number, title, date and author, if applicable, of publication be cited.

Current JPRS publications are announced in Government Reports Announcements issued semi-monthly by the National Technical Information Service, and are listed in the Monthly Catalog of U.S. Government Publications issued by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Indexes to this report (by keyword, author, personal names, title and series) are available from Bell & Howell, Old Mansfield Road, Wooster, Ohio 44691.

Correspondence pertaining to matters other than procurement may be addressed to Joint Publications Research Service, 1000 North Glebe Road, Arlington, Virginia 22201.

30 June 1980

JAPAN REPORT

No. 101

CONTENTS

MILITARY

FJ 1979 Major Defense Contractor Line-Up (JPE AVIATION REPORT-WEEKLY, 4 Jun 80)	1
Major Defense Contracts Expected in FY 1980 (JPE AVIATION REPORT-WEEKLY, 4 Jun 80)	3
JDA Picks Three Firms for Portable SAM Fabrication (JPE AVIATION REPORT-WEEKLY, 4 Jun 80)	5
ASDF Aircraft Strength in FY 1984 (JPE AVIATION REPORT-WEEKLY, 4 Jun 80)	6
GSDF Antitank Weapons in FY 1984 (JPE AVIATION REPORT-WEEKLY, 4 Jun 80)	8

ECONOMIC

Outline of 'International Trade, Industrial Policy in the 1980's' (TSUSAN JANARU, Apr 80)	9
MDC Top Executive Here on ATMR Proposal (JPE AVIATION REPORT-WEEKLY, 4 Jun 80)	38
Mitsubishi To Expand MAI Facilities (JPE AVIATION REPORT-WEEKLY, 4 Jun 80)	39
SJAC Committee Reveals Long-Term Plan for Industry (JPE AVIATION REPORT-WEEKLY, 4 Jun 80)	40
Briefs	
MHI To Increase Employees	41
XJB Representation Organization	41

SCIENCE AND TECHNOLOGY

MT-X Program: Prospects, Problems (JPE AVIATION REPORT-WEEKLY, 4 Jun 80)	42
---	----

MILITARY

FJ 1979 MAJOR DEFENSE CONTRACTOR LINE-UP

Tokyo JPE AVIATION REPORT-WEEKLY in English 4 Jun 80 pp 4,5,6

[Text]

The Central Procurement Office (CPO) of the Japanese Defense Agency has released a list showing 20 major defense contractors during FY 1979 which ended March 31. It is noted that Mitsubishi Heavy Industries Ltd. has continued to rank No. 1 since FY '73. A translation of the list follows:

Unit = ¥1 million

<u>RANK</u>	<u>COMPANY NAME</u>	<u>NUMBER OF CONTRACTS</u>	<u>AMOUNT</u>	<u>ANNUAL SHARE IN ENTIRE CONTRACTS(%)</u>
1	Mitsubishi Heavy Industries Ltd.	192	96,927	15.0
2	Mitsubishi Electric Corp.	190	53,960	8.4
3	Kawasaki Heavy Industries Ltd.	106	49,545	7.7
4	Ishikawajima-Harima Heavy Industries Co.	75	39,897	6.2
5	Toshiba Corp.	195	18,185	2.8
6	Nippon Electric Co.	287	16,640	2.6
7	Nippon Kokan K.K.	2	16,581	2.6
8	Mitsui Shipbuilding & Engineering Co.	6	13,666	2.1

<u>RANK</u>	<u>COMPANY NAME</u>	<u>NUMBER OF CONTRACTS</u>	<u>AMOUNT</u>	<u>ANNUAL SHARE IN ENTIRE CONTRACTS (%)</u>
9	Komatsu Ltd.	50	10,291	1.6
10	Nippon Oil Co.	192	8,857	1.4
11	Oki Electric Co.	143	8,558	1.3
12	Japan Steel Works Ltd.	22	8,152	1.3
13	Fujitsu Ltd.	141	7,659	1.2
14	C. Itoh Aviation Co.	58	7,304	1.1
15	Sumitomo Shipbuilding & Machinery Co.	4	7,146	1.1
16	Fuji Heavy Industries Ltd.	50	6,712	1.0
17	Shin Meiwa Industry Co.	22	6,706	1.0
18	Hitachi Shipbuilding & Engineering Co.	35	6,703	1.0
19	Fuji Electric Co.	27	5,850	0.9
20	Nissan Motor Co.	41	5,788	0.9
	TOTAL:	1,838	395,127	61.2

CSO: 4120

MILITARY

MAJOR DEFENSE CONTRACTS EXPECTED IN FY 1980

Tokyo JPE AVIATION REPORT-WEEKLY in English 4 Jun 80 pp 6,7

[Text]

The CPO released last week a list of major military equipment and services which will be ordered during FY 1980:

<u>ITEM</u>	<u>QUANTITY</u>
*GSDF	
Model 74 main battle tanks	60
Model 75 155mm self-propelled howitzers	26
Model 73 large trucks equipped with winches	277
HU-1H multipurpose helicopters	5
OH-6D light observation helicopters	10
Modification of Hawk guided missile systems	-
Microwave communications network for defense use	-
*MSDF	
P-3C antisubmarine patrol aircraft	10
2,900-ton DD destroyers	2
1,400-ton DE escort frigate	1
2,200-ton SS submarine	1
440-ton MSC medium-size minesweepers	2
US-1 search/rescue flyingboat	1
HSS-2B antisubmarine helicopters	2
SCB47W electric cells for a submarine	1 set

<u>ITEM</u>	<u>QUANTITY</u>
SCV49W electric cells for a submarine	1 set
Tan-SAM2-1 (for training)	1 set
P-3C personnel training	-
*ASDF	.
F-15J fighter interceptors	30
F-15DJ fighter interceptors (for training)	4
F100-IHI-100 engines for F-15s	10
T-2 advanced trainer aircraft	4
F-1 support fighters	3
J/FPS-2 fixed three-dimensional radar	1 set
J/FPQ-X RAPCON	1 set
V-107 search/rescue helicopters	2
J/TPS-101 mobile three-dimensional radar	1 set
E-2C training and maintenance equipment	-
Training of E-2C personnel in the United States	-
*TR&DI	
Development of a small turbofan engine	-

CSO: 4120

MILITARY

JDA PICKS THREE FIRMS FOR PORTABLE SAM FABRICATION

Tokyo JPE AVIATION REPORT-WEEKLY in English 4 Jun 80 pp 7,8

[Text]

The Japanese Defense Agency (JDA) has selected Nippon Electric Co. (NEC), Toshiba Corp. and Nissan Motor Co. to conduct test fabrication of portable surface-to-air missiles starting in FY 1981. This will help the three firms to receive portable SAM orders after development under Kawasaki Heavy Industries, Ltd. (KHI), the possible prime contractor.

The portable SAM's guidance system will be fabricated by NEC and Toshiba, launching and booster rockets by Nissan, and test equipment by Toshiba.

The portable SAMs are designed for antiaircraft operations of the Ground, Maritime and Air Self-Defense Forces. They are already in use in the United States and major European nations.

Although operational requirements of the Japanese portable SAM have yet to be revealed, the missile is expected to be 1.5 meters long, have a speed of Mach 2 and a target range of three kilometers. The image homing process will be used in its guidance system, according to JDA sources. This process is expected to upgrade the missile's frontal attack capability. In the test fabrication stage, however, infrared-ray homing heads will be manufactured along with the image homing system.

CSO: 4120

MILITARY

ASDF AIRCRAFT STRENGTH IN FY 1984

Tokyo JPE AVIATION REPORT-WEEKLY in English 4 Jun 80 pp 8, 9

[Text]

During the FY '80 - '84 Medium-Term Defense Program, the ASDF will procure 145 aircraft, however, aircraft strength in FY 1984 will fall to 757 compared to 767 as of March 31, 1980.

The 10 fighter interceptor squadrons in FY 1984 will comprise six F-4EJ squadrons and four F-15 squadrons. Procurement of the F-15 during the FY '80 - '84 MTDP will be for 77 aircraft in addition to 23 ordered in FY 1978. With introduction of the F-15, the F-104J will be phased out. But, one F-4EJ squadron is expected to be phased out in or around 1984. If the ASDF is to maintain 10 squadrons in 1984, it will be thus necessary to procure an additional 23 F-15s.

Activation of three support fighter squadrons of the F-1 will be completed during FY 1980. During the FY '80 - '84 MTDP, 13 F-1s will be procured to cover attrition. The number of F-1s in service will increase to 63 in FY 1984 from 57 in FY 1979.

Four E-2C airborne early warning aircraft will be procured in addition to the first four funded in FY 1979.

Two flight training squadrons equipped with the T-2 supersonic trainer will be maintained until the late '80s. To meet attrition, and also to deploy six aircraft at the three F-1 squadrons, 23 T-2s will be procured. The number of the T-2 in service in FY 1984 will be 82.

The number of the C-1 tactical jet transports in FY 1984 will total 26 compared to 29 as of March 31, 1980. The ASDF

is authorized to operate 36 transport aircraft and a new aircraft (C-X) will be procured during the FY '80 - '84 MTDP to augment C-1 squadrons.

As of March 31, 1980, there were 31 rescue helicopters in service with the ASDF, comprising four S-62s and 27 V-107s. During the FY '80 - '84 MTDP, six V-107s and seven new helicopters will be procured. Due to attrition of the V-107 and phase-out of the S-62, there will be 32 rescue helicopters in ASDF service in FY 1984, comprising 25 V-107s and seven new helicopters.

CSO: 4120

MILITARY

GSDf ANTITANK WEAPONS IN FY 1984

Tokyo JPE AVIATION REPORT-WEEKLY in English 4 Jun 80 p 9

[Text]

The GSDf plans to modernize its antitank weapons during the FY '80 - '84 MTDP with procurement of 1,457 66mm grenade launchers, 852 84mm recoilless rifles, 33 sets of Model 79 antiship/tank missile launchers and 4 sets of Model 64 antitank missile launchers.

84mm recoilless rifles and Model 79 antiship/tank missile launchers will replace part of 89mm rockets and 106mm recoilless rifles currently in service.

Antitank weapons of the GSDf in FY 1984 will comprise 220 sets of the Model 64 antitank missile launchers, 38 sets of the Model 79 antiship/tank missile launchers, 253 106mm self-propelled recoilless rifles, 5,568 89mm rocket launchers, 1,078 84mm recoilless rifles, and 1,457 66mm grenade launchers.

Main particulars of the GSDf antitank weapons follow:

<u>Type</u>	<u>Crew</u>	<u>Weight</u>	<u>Range</u>	<u>Bore</u>	<u>Rate of Fire</u>
89mm rocket launcher	2	6.8kg	0.2km	89mm	10rpm
106mm SP recoilless rifle	3	21.5kg	1.1km	106mm	10rpm
Model 64 MAT	5	255kg	1.5km	120mm	2rpm
Grenade launcher	1	8kg	-	66mm	-
84mm recoilless rifle	2	14.2kg	0.7km	84mm	6rpm
Model 79 antiship/tank missile	5	240kg	4km	152mm	2rpm

CSO: 4120

ECONOMIC

OUTLINE OF 'INTERNATIONAL TRADE, INDUSTRIAL POLICY IN THE 1980'S'

Tokyo TSUSAN JANARU [TSUSAN JOURNAL] in Japanese Apr 80 pp 39-52

[Text] Trade and Industrial Policy Vision in the Decade of the 1980's
(Outline)

1. Transformation in the World and Japan
2. Proposal on a New National Goal
3. Guidepost to Management of Economic Society
4. External Policy in the Age of Mutual Dependence
5. Energy Security and Preparations for Extricating From the Oil Society
6. The Path to Technology-Oriented Country
7. Promotion of Quality of Livelihood
8. Regional Economic Society and the Industry's Role
9. Development of a Creative Industrial Structure
10. Growth of Viable Small and Medium-Sized Enterprises
11. A Perspective of Major Industries and New Frontier Potentials
12. From the Opening of Civilization to Its Exploration

1. Transformation in the World and Japan

Challenging the Future to Cope With a Crisis

The 1980's is an era of struggle along the narrow path of countless unstable factors marked by a multitude of dramatic changes such as the energy situation of the 1970's. It is also an era heading toward a bright 21st Century through means to create a stable society "without the oil structure."

The 1980's represent a period of transformation for the world as well as Japan, a crucial period when Japan will be deciding its future direction. We must now prepare for any eventuality and creatively assume the future challenge with a positive stance.

Energy Situation and the Multipolarity of International Politics and Economy

The pattern of changes on the world level appear in the form of the energy situation and the political and economic current.

(1) There is anxiety over the supply of oil which assumes the principal role in energy. Predictions are that solar energy and nuclear energy will play the principal role in the 2030-40 era. One half of the coming century will be an "era of diversified energy," with maximum input of alternate energy to include oil. The 1980's will be the gateway.

(2) Although U.S. power is still the world's strongest, its relative position is on the decline. Militarily, the two-pole structure of the United States and the Soviet Union will probably remain, but in the political and economic front, the world is likely to transform into a more multi-polar and multi-dimensional structure, thus reinforcing the uncertainties. Mutual dependency will grow increasingly among nations.

It should be a complex era in which politics and economy will undergo changes while a mutual relationship is being maintained.

Ending of a Catch-up Type of Modernization and Becoming an Integral Part of the World

(1) Ever since the Meiji era, Japan has worked for modernization and formation of an industrial society with the aim of catching up to the level of leading nations of Europe and the United States. Looking back at the second half of the 20th century:

① The 1950's was a period of reconstruction through completion of basic industries.

② The 1960's was a period of development through conversion to heavy and chemical industries.

③ The 1970's was one of coping with changes through knowledge intensification.

As a result, the per capita income climbed to about 90 percent of that in the United States in 1978 and increased by 15 percent over the average for the nine nations belonging to the European Economic Community. Apart from the aspect of one's stock as living space, Japan attained the average level of Europe and the United States in the flow aspect.

Japan's level of technology also reached the level of that of Europe and the United States. Formerly, Japan pursued a "shearing-type technology" wherein it made improvements on technology nurtured in Europe and the United States. But now it has reached a point of changeover to the "sowing and growth type technology" in demonstration of creativity.

(2) As viewed from the size of economic activity, nearly 10 percent of global economic activity is conducted by the Japanese archipelago occupying only 0.3 percent of the world's land area or by Japanese who represent only 3 percent of the world population (3.6 percent in 1950, 4.4 in 1960 and 7.5 in 1970).

As "an integrated nation" of the world after the 1980's, Japan must take an active role to make a positive contribution to the international society. The international society will also be looking to Japan.

On the other hand, Japan stands to be profoundly affected by the international trend on the issues of energy, raw materials and export markets. It will be of increasing concern.

(3) The increase of the elderly will pose an effect on the problems of employment, welfare, family life, social security and worthiness of living. On entering the 1980's, new measures will be required to cope with it.

2. Proposal on a New National Goal

National Image of Trust

In considering Japan's present status and issues for the 1980's, we think that the time has come for us to search out a new national goal and determine Japan's course over the long-term. We propose the following three points:

- (1) International contribution by "major economic power."
- (2) Overcoming the restraints of a "minor resource power."
- (3) Joint existence of "vitality" and "latitude."

The initial goal is to contribute to world peace, stability and development of global economy by making use of Japan's economic strength. Japan must gain the trust and respect of other nations and become the object of stronger mutual dependence.

Although a contribution to international society through the free trade structure and expanded economic cooperation would pose a burden, the Japanese nation as a whole would undertake it.

Path to Establishment of Economic Security and Technology-Oriented Nation

Japan depends on foreign sources for 89 percent of energy requirements and 55 percent for food. There has been a renewed recognition of the difficulty of "survival" in an increasingly complex international situation brought on by the oil crisis. The second target--that of overcoming the restraints of a "minor resource power"--is the concept of protecting the national way of life through "economic activity."

The first and second goals are complementary. A positive contribution to the international society constitutes a forage for Japan's economic security and is linked to the national interest. On the other hand, the

efficacy of international contribution will depend on a strong domestic base. The means to securing economic security are:

- (1) Establishment of greater mutual dependence with other countries. While the focus will be on economic measures, it also involves a general point of view to include political, diplomatic and cultural areas.
- (2) The diversification of oil supply, foodstuff and scarce resources, the build-up of reserves as well as speedy efforts for development of alternate energy to take the place of oil. To realize an energy conserving type of society, efforts will be made to change the industrial structure and the people's style of living.
- (3) The brain resources, as Japan's unique "bargaining power," will be used to promote the development of a creative, independent technology with the aim of becoming a so-called "technology-oriented country."
- (4) Establishment of an information system to strengthen the crisis management structure in times of emergency.
- (5) Setting the level of expenditures required for economic security at a level higher than in other leading industrial nations. The aggregate amount will be constantly fixed at above some specific scale of the Gross National Product.

Maintenance of Vitality While Seeking Latitude

The society's vitality must be maintained to realize the first and second goals.

The fulfillment of living space and free time requirements can be described as relating to latitude. The pursuit of latitude should not be conceived as being devoid of possibility of its leading to a loss of vitality--a form of disease among the leading nations--as seen in Europe and the United States. Utmost caution is required on this point. Latitude is desired in dealing with economic management or international responses.

In the 1980's, vitality and latitude must exist in parallel.

3. Guidepost to Management of Economic Society

Importance of Economic Security and Stock Build-up Type Growth

- (1) The goal of economic growth is the betterment of the national way of life and its long-term continuity. To cope with such grown constraints of the 1980's as ① the energy problem, ② the trade friction problem, ③ the clouded feeling toward the future, and ④ the social vitality problem, measures for proper growth will be sought. Under low growth, it

would be difficult to conduct various structural reforms or avoid "friction" attributed to a conflict of interests. For this reason, some growth is essential.

(2) For growth, importance will be attached on the following:

① An economic security measure to protect the national way of life is the most vital. For this reason, emphasis will be on energy measures and investments in research and development.

② Since 1974, renewed plant investments have become stagnant and facilities are rapidly deteriorating. To cope with problems of energy conservation, productivity and international division of labor, private plant investments will be fostered.

③ To provide for the qualitative fulfillment of living space, housing investments and livelihood-related social capital investments will be increased.

Employment Stabilization and Preparing for an Elderly Society

(1) The Japanese employment practices will change in the 1980's as the labor force grows older, the number of working women increases and the people become better educated.

Enterprises, while basically maintaining a lifetime employment system, will be required to realize hirings that would utilize the special characteristics of the labor force. At that time, depending on the situation, it would become important to amend the employment practices by advancing the retirement age, changing the promotion and job classification system or adopting an alternate day work system, a flex time system or a new qualifications system.

(2) In making preparations for a growing society of the aged, the people's concurrence will be sought on how the burden of social security ought to be handled. Based thereon, some action or revision will be needed in the systems of annuity, health insurance and employment.

Commodity Price Stabilization and Adjustment of Supply Conditions

Commodity price stabilization is one of the basic factors for insuring continued growth. The aim of the price policy is to stabilize the prices over the long-term; it should not be limited to a short-term point of view. Along with the policy on effective control of demand, the adjustment of supply conditions such as improved productivity through proper plant investments and the energy policy are the base of the price policy of the 1980s.

Vitality of the Private Sector and the Government's Role

(1) Japan's industrial society is such that the vitality of the private sector is readily demonstratable owing to the operation of market functions. Various public needs can be expected to grow. In their fulfillment, matters that previously had been considered as a public sector will also be infused with competitive functions and private vitality while playing down excessive hopes placed on the administration.

(2) The government will fully perform its role in fields where matters cannot be left up to market functions only, such as, for example, technological development requiring huge funding, the risks great, lengthy incubation period, government-to-government negotiations on national safety, realization of social justice and international transactions.

(3) Amid expectations of the emergence of trade protectionism and of industrial nations now growing at a modest level, Japan will continue to maintain the markets that has been opened up. Administrative considerations will be required more than ever in measures for resolving social frictions over employment and other matters that may arise during the process.

(4) It is vital in the 1980's when, internationally, mutual dependency mounts and, domestically, a diverse sense of value progresses, that accurate intent and feelings be mutually conveyed and recognized. For smooth economic management, it is essential that such functions fully operate in relations between the Japanese Government and foreign government, the people and the government, and the central government and local government.

Also, the information collection and analysis capacity at home and abroad will be expanded, and a system set up to insure an accurate and speedy policy action.

4. External Policy in the Age of Mutual Dependence

Keynote of World Economy

(1) Throughout the world, the growth is expected to be around the same as in the 1970's, slightly under 4 percent. The growth rate of leading countries will be low at about 3 percent, while that of developing nations will be relatively high. The growth of industrial nations now displaying moderate growth and of ASEAN nations will be rather high. That of the Soviet Union and East European nations is expected to be close to that of the world as a whole.

(2) With the leading nations expected to be inclined more toward the resolution of their own internal problems, international adjustments can be expected to become increasingly difficult.

(3) Among developing nations, greater differences and polarization will probably surface between oil producing nations/moderately growing industrial nations and minimal growth developing nations.

(4) The 1980's will be an era of search for stabilization of the global economic system in the various aspects of energy, order in international trade, north-south problem, and currency and finance.

(5) As each nation strives for development and safety under international collaboration, Japan will work subjectively for preservation of the principles of freedom and non-discrimination and collaboration with other countries and aim at creating a national image which can earn the respect of other nations and foster mutual dependence.

(6) The Pan-Pacific region is one of the regions of the world with the greatest potential. Japan's role is to draw out and realize that potential. There being nations historically, culturally and economically diverse in the Pan-Pacific region, Japan will exert greater efforts toward the interchange of humans, culture and information. In addition, economic cooperation to realize dynamic economic development and international division of labor as well as joint efforts in resource, energy and oceanic development will be pushed.

Maintenance of Free Trade Structure and Institution of General, Economic Cooperation

(1) Along with maintaining and accelerating the development of markets, the free trade structure will be maintained with determination to lift custom duties as required, and international division of labor and international industrial cooperation will be promoted.

(2) With respect to economic cooperation toward developing countries, general economic cooperation organically integrating assistance, investments and trade will be conducted. Along with existing economic cooperation indicators such as government aid for development, export credit and direct investments, a "general economic cooperation indicator" embracing imports of manufactured goods from developing nations will be set up. The goal would be to expand this total amount to a sixfold level (nominal amount) by the end of the 1980's. In such a case, the ratio of the new indicator to GNP will be 3 percent by the end of the 1980's from 1.6 percent in 1978 (currently about 2 to 2.5 percent in Europe).

Foreign Investments, International Finances and International Communications

(1) External direct investments to be promoted primarily will be of the type to gain or lay the groundwork for securing markets in leading nations, to effect a balance among domestic sales, exports and overseas production, and to locally process primary products. Because of the

problem of country risk in this case, a system will be established to collect and analyze information by country and area while working for the conclusion of an investment guarantee pact.

(2) A positive move will be made for the internationalization of the yen, the liberalization and flexibilization of the financial market and the creation of a Tokyo international financial market. Through this, a contribution can be made toward the stabilization of the international currency structure and the internationalization of industry.

(3) To prevent various international economic problems from developing into an emotional "international friction," efforts will be made to internationalize Japan and the Japanese through internationalization of systems, greater international communications and maintenance of order in international information.

5. Energy Security and Preparations for Extricating From the Oil Society

The Importance of International Point of View

In advancing the energy policy, an international point of view becomes increasingly important. For this reason, emphasis will be placed on the political aspects of the energy problem, on collaboration and cooperation with leading nations, on bilateral cooperation with oil producing nations, and on the stabilization of international finances. In addition, the system for collection, filing, analysis and dissemination of information will be improved.

Energy Conservation and Development/Utilization of Alternate Energy

(1) To cope with the energy situation which constitutes the most stringent restraint of growth, the potential demand for energy will be reduced by 15 percent in 1990 through energy conservation, and the degree of dependence on oil imports will be cut back to 50 percent from the current 75 percent. To do so, all possibilities will be explored to promote energy conservation and to develop and utilize alternate forms of energy in place of oil, and government funds will be infused boldly.

(2) To reduce the requirements in the face of the grave energy supply and demand situation and to minimize the effects of a soaring energy price, energy conservation will be promoted in such fields as industry, public welfare and transportation. Technological development for energy conservation will be pushed as well as a program for enhancing energy conservation consciousness.

(3) A positive move will be made for the expanded utilization of alternate forms of energy to replace oil such as nuclear energy, coal, liquified natural gas, hydropower and geothermal. Also, the development and utilization of new fuels such as liquified coal and new energy as solar energy and rapid breeder reactor will be accelerated.

Particularly with respect to nuclear energy, efforts will be made to promote safety and reliability, along with the speedy selection of nuclear power station sites, the development and utilization of new-type reactors and the development of utilization technology for nuclear heat.

Additionally, with respect to coal, the development and import of foreign coal and the construction of coal centers will be promoted to expedite fuel conversion on the part of users, and the application technology will be developed.

(4) The development and utilization of local energy such as solar system, geothermal, small and medium-scale hydropower, waste heat from factories, methane from decomposed waste, wave power, wind power, tidal power and biomass will be advanced.

Stable Oil Supply

To insure a stable supply of oil, the source of supply will be diversified through the import of about 30 percent of all oil from Asian regions by around 1990. Also, the supply channel will be diversified through an increase of G.G. crude oil. In addition, an independent development of oil will be promoted at home and abroad, with the aim of attaining 1.5 million barrels per day of independently developed crude by 1990. Further, technological development will be pushed to cope with heavy grade oil. Reserves will be increased to at least the level of that of European countries.

Environment, Prices and Costs

(1) In implementing the energy policy, it may become necessary to effect an adjustment with the environmental policy. A scientific, rational environmental policy will be advanced while making provisions for policy adjustments.

(2) Given the age of worldwide high energy prices, we must recognize that, basically, soaring commodity prices attributed to higher imported oil prices must be absorbed through rationalization.

As for prices of alternate forms of energy, a policy to insure their smooth introduction may be adopted in certain cases to maintain a level at which they can compete pricewise with imported coal.

(3) The costs required for a stable supply of energy must be borne by the whole national economy. Concretely, they should be absorbed as much as possible through rationalization of enterprises and by passing them on to consumers in keeping with market principles. But in energy-related investments, some policy measures are needed where the passing of price hikes may be difficult.

Establishment of Crisis Management Structure

To minimize the damage or insure a speedy recovery from any future cut back of the oil supply that might threaten the stability of Japan's economy, a crisis management structure will be formed.

A scenario of every conceivable situation will be prepared to cope with a crisis. The scenario will presume a cut back in the supply, and a "degree of crisis" will be determined based on the amount of domestic reserves and the possibility of importing alternate forms of energy. A "response manual" conforming to the degree will then be prepared.

Stable Supply of Resources

Resources will be developed at home and abroad to maintain a stable source. The focus of long-term resource development in the 1980's will be on the development of technology to utilize low grade mineral deposits, a survey for vast resource deposits through launching of resource-detecting satellites, and the development of ocean resources. Also, reserves will be increased for reasons of economic security. As for water, new sources will be developed, along with an effective utilization of water resources.

6. The Path to Technology-Oriented Country

Concept of Technology-Oriented Country

(1) Technological reform is the source of progress for the world society. Great hopes are placed on technological reform as a means to resolve varying problems of the 1980's. Japan will develop its own creative power and contribute to the world as an innovator.

(2) Technological development is a means of attaining economic security. With the brain resources, a creative, independent technological development will be advanced to enhance the bargaining power. A technological nation will be Japan's goal.

(3) Today, there is concern that technological progress is in a period of stagnation. But in the 1980's, the following can be expected:

- ① Application and combination of existing technology.
- ② Development of new technology through new application of scientific technology.
- ③ Preparations for an epochal technological reform for the coming generation expected after the 1990's.

Thus, it will be possible to open up a new outlook in the economic society.

Technological Development Issues of the 1980's

The various demands of the economic society on technology will be determined, and the following four technological development issues will be pushed positively:

(1) Resolution of the energy problem.

① Technology on alternate forms of energy such as nuclear energy, coal, sun, geothermal and biomass.

② Technology on energy conservation such as MHD power generation and high efficiency gas turbines.

(2) Qualitative improvement of livelihood and betterment of regional societies.

① Development of manufactured goods with new functions, high performance, and greater safety and durability.

② Technology related to such livelihood-related social systems as housing, medical care, welfare and education having to do with social needs.

③ Technology on environmental protection, safety and disaster prevention.

④ Community technology such as local energy system.

(3) Greater promotion of industrial knowledge intensification.

① Software and systems technology as evident in the integration of micro-computers in the equipment process.

② Technology based on new scientific knowledge such as on utilization of new materials and laser.

(4) Challenges Toward Technological Reform in the Coming Generation

① Life sciences such as cancer treatment, genetic manipulation, and use of optical composition.

② New energy such as nuclear fusion.

③ Information processing based on new principles such as that of the (Josephson) element.

Three Fields in Which the Government Plays a Major Role

In the area of technological development, weight will be placed especially on policies dealing with the following three fields:

(1) New elementary material-type technology as represented by new materials and electronic elements.

(2) Large-scale systems technology as represented by technology on alternate forms of energy.

(3) Social systems technology as represented by the livelihood-related social system.

Technology Policy in Search of Creativity

(1) To promote a highly creative, independent technological development, the following policies will be promoted positively:

① A changeover to forward engineering in which research and development will be enhanced while accumulating basic data, without fear of trials and errors.

② Training of human resources of the type able to accomplish a technological breakthrough.

③ Improvement of technological development structure to address the risks positively.

④ Development of research management procedure to assess creativity.

⑤ Strategic application of the patent system.

(2) Systematic promotion of technological development.

① A "technological development vision" will be proposed on technological development issues that need to be promoted aggressively and on the development structure and funding plan.

② With respect to technological development issues of urgency such as energy technology or requirements for massive funds for development, the state will take the initiative to advance large-scale projects.

(3) The ratio of technological development costs, including energy measures, to the Gross National Product will be increased from the current 1.7 percent to the current European-American maximum level of 2.5 percent in the mid-1980's. The goal will be to achieve 3 percent at the end of the 1980's.

The aim will be to increase the government's share of technological development funds to at least 40 percent, now under 30 percent. In seeking funds, a study will be needed on finding a new source of revenue as research and development possesses the character of public investments.

(4) To resolve the common issues of mankind such as development of the energy technology, research cooperation with leading nations will be pushed positively. Also, efforts will be made to transfer proper technology to developing nations according to need.

7. Promotion of Quality of Livelihood

(1) Through consolidation of housing, residential land and livelihood-related social capital and their promotion in a general and organic manner, a comfortable, quality housing will be assured.

(2) To promote the liquidity of land, a study will be made on the creation of a "land price slide bond" as an asset retention measure in lieu of land. Further, new residential land will be created, such as man-made ground and stratified structure modules.

(3) Among leading nations, Japan is the only one which does not yet have a 2-day-off-a-week system. In the early 1980's, that system will be fully implemented and, by mid-1980's, the long-term leave system will have been realized after being introduced in stages.

(4) Varied educational opportunities will be offered to take advantage of more free hours, with sites for sports and cultural activities being secured.

(5) To realize a personal consumer life, the foundation of the consumer credit industry will be strengthened, and a procedure for passing on consumer information will be established. Meanwhile, against demands for personalized, higher-class products, automation for limited production of a large variety of products will be instituted.

8. Regional Economic Society and the Industry's Role

Mutual Dependence of Region and Industry

(1) Lately, there has been an increasing interest in rural areas against a backdrop of the diminishing income spread with major cities. Further, with increased regional settlements, there has been a growing potential for development in rural areas.

Still, the problem of overdensity in major cities cannot be brushed off as the population is expected to swell to 20 million by the year 2000.

(2) For this reason, efforts will be made at various areas to build an alluring regional economic society, along with proper development of industries.

In such areas, it will be necessary to insure varied employment opportunities and provide for a stable regional economy. Importance will be attached to the development of a multi-layer regional industrial structure and to organic coordination between regions toward that end.

(3) For the proper deployment of industries, action will be taken along the following lines:

- ① Restricting excessive concentration by providing incentives to industries to build plants in regions and levying a burden against having businesses within major cities.
- ② General industrial development to include the tertiary industry.
- ③ Industrial growth and promotion by utilization of local resources.
- ④ Increasing the development potential of regions by securing industrial sites and water and by improving transit and transportation facilities.
- ⑤ Urban development in major cities.
- ⑥ Priority investments in social capital for suburban cities.

Formation of Regional Economic Promotion Vision

(1) In promoting a regional economy, it is vital that each region develop its own policy. A "regional economic promotion vision" in harmony with the entire industrial economy will be pressed, and suitable policy measures will be offered.

(2) Concrete examples of regional economic promotion vision are the technopolis concept which calls for the realization in a region of a creative, knowledge intensification by industry and the creation of a new regional culture, or the international city of commerce concept based on restoration of the international airport.

(3) In forming a regional economic promotion vision, a long-term plan on arterial traffic network should be considered in depth, which then should be positively integrated with improvement and expansion plans on transit and transportation methods needed for the development of a regional social economy.

(4) Each region must proceed with regionalization based on the assumption of internationalization of Japan's economic society by improving the flow of information from the central site or undertaking internationalization on its own.

(5) In the regional economic promotion, efforts will be devoted toward the creation of an alluring regional society while maintaining harmony with the environment.

(6) To prepare for disasters such as earthquakes, the situation at the time of occurrence must be anticipated and manuals prepared. Public

security and anti-disaster measures must be pushed forward through improved paths and parks for shelter and fireproof city housing.

9. Development of a Creative Industrial Structure

Issue and Criteria of Industrial Structure

Desirable matters and criteria in the industrial structure for the 1980's are:

- (1) Contribution toward harmony and development of world economy: Dynamic, comparative superiority criteria.
- (2) Response to people's needs in pursuit of qualitative improvement in life: Criteria for satisfying the people's needs.
- (3) Surmounting the weakness in the energy area: Criteria on energy conservation and resource conservation.
- (4) Nurturing the long-term development base of the economy and securing economic safety: Criteria on security.

Knowledge Intensification of Industrial Structure by Display of Creativity

(1) High knowledge intensification keyed on display of creativity will be pushed while capturing the results of knowledge intensification of the 1970's. In other words, with an independent technological development as the base, efforts will be made to realize a high value added industry through technological intensification centered on soft technology and an intellectual labor intensification.

(2) Technological reform centered on electronics information technology, energy-related technology and new elementary materials will be pushed positively, and with that as motive power, knowledge intensification of the industrial structure will be instituted in a diversified manner by industry.

(3) Not only would the knowledge intensification-type industry be developed as a leading industry, knowledge intensification will be promoted within various industries with respect to manufactured goods and the production process.

Institution of Creative, Knowledge Intensification by Industry

In respect to major industries, the weight will be directed in the following directions: In other words,

(1) In the area of basic material industry, energy conservation will be pushed by application of the electronics information technology in the production process. Also, the quality of manufactured goods, performance

and reliability will be improved, and the general engineering capabilities promoted (total system).

To satisfy new needs, the development and application of high performance, high function new elementary materials and special materials will be promoted (speciality).

(2) In the area of processing and assembly industry, the intelligentization of various machinery will be pushed through use of the electronic information technology and the application technology will be made into an advanced state (software).

In response to changes in demand for an array of manufactured goods, a production method to flexibly and automatically process and assemble them will be developed and utilized (flexibility).

In keeping with social needs in the fields of medical care and transit, new functions will be devised through collaboration with the machinery industry and other industries and through a combination of different technologies (system).

(3) In the area of livelihood-related industry, products embodying a new, advanced sense will be merchandized in keeping with many changes in the people's conscience and pattern of living (fashions). Further, in response to steady consumer demands, products which are durable, safe and energy efficient will be developed.

Between the elementary material sector and the end user, organic collaboration will be heightened with respect to new product planning and technological development (feedback).

(4) In the area of distribution and services, productivity will be increased by introducing new technology, new management methods, systemization and greater capital formation rate. Also, collaboration with the manufacturing industry will be fostered.

Realization of a Desirable Industrial Structure

To realize a desirable industrial structure, the following industrial structure will be adopted, while keeping the industry's own efforts as a base, to supplement the market functions:

(1) Presentation of Vision

Through presentation of a vision on industrial structure, ample information will be offered. Efforts will be made to form a consensus among the various national strata, ensure a smooth resource distribution and vigorously develop and maintain a private economy.

(2) Promotion of Technological Development

The state will be responsible for high-risk technological development and basic experiments and research and will render strong assistance to private technological development in advanced and large-scale sectors and to those contributing to social development.

(3) Application of Financial and Tax Measures

Through policies, financing and tax measures, industries contributing to the advancement of technologically leading industries, to full attainment of housing and livelihood-related social capital and to satisfying the needs of environmental protection and medical care will be promoted in reaching an advanced state. In addition, steps will be taken to promote energy conservation investments and re-investments. To facilitate the use of private funds, assistance in the form of combined loan guarantee and interest payment will be studied.

(4) Promotion of Industrial Labor Policy

Through enhancement of the nature and creativity of human resources and nurturing of their flexibility, the transformation of the employment structure along the direction of knowledge intensification of the industrial structure will be pushed smoothly.

Smooth Implementation of Industrial Adjustments

(1) The industrial adjustment policy will be executed under the following principles, based on the concrete response of the private economy:

- ① Economic efficiency from an intermediate and long-term point of view.
- ② Augments changes stemming from the market structure.
- ③ A temporary policy.
- ④ Limited application of policy, with a clear-cut substance.

(2) To ensure a smooth industrial adjustment, a proper economic growth will be maintained and the following policies adopted:

- ① Clarification of outlook by industry.
- ② Support of redeployment and re-employment of laborers.
- ③ Promotion of disposal of surplus equipment.
- ④ Support of conversion to other fields of activity.

- ⑤ Adjustments to ensure a smooth industrial reorganization.
- ⑥ Measures to mitigate the impact on regional economy.

Advancement of Service Economy

(1) In the service sector, progress can be expected particularly in the following:

- ① Service sector complementing the secondary industry: Information industry, engineering industry, expert research and development agencies, designing profession.
- ② Service sector in mutual development with the secondary industry: Musical performances and audio equipment, restaurant services and kitchen equipment.
- ③ Service sector contributing toward a comfortable way of life: Public services such as medical care, health and education, sports-related services, culture-related services.
- ④ Service sector smoothening social activities: Professional services of lawyers, certified public accountants and patent lawyers.

(2) To promote the development of the service sector, the following policies will be adopted:

- ① Enhancement of productivity and quality of services.
- ② Promotion of technological development.
- ③ Promotion of industrialization of public services.
- ④ Growth of the service sector linked to regional characteristics.

Promotion of Rationalization of Distribution

(1) In the future distribution industry, rivalry having to do with status and distribution channels will increase.

(2) The maintenance of competition in the distribution industry and application of private creativity can be tied to the formation of desirable distribution industry suited to the wide needs of consumers.

(3) As to the distribution policy, the following guiding and complementary policies will be adopted for modernization and advancement of the distribution industry:

- ① Basic adjustment for modernization of distribution such as propagation of the POS system (information control at the time of sales).

- ② Promotion of rationalization of material flow, such as the improvement of intra-city material flow.
- ③ Promotion of distribution efficiency by industry type, taking special industrial characteristics into consideration.
- ④ A policy mix of promotional adjustment policies to display the characteristics of small and medium-sized distribution industry.

Industrial Vitality and Market Functions

(1) For the maintenance and development of market functions, efforts will be made to enhance the functions to observe major industries from a general viewpoint, to get a grasp of the actual situation, to assess, to adjust the competitive environment and to properly control entrepreneurial activities.

(2) In areas where the market mechanism does not function effectively, the state will undertake corrections positively. Even in such a case, it will take precautions against impairing the long-term vitality of the economy and industry.

10. Growth of Viable Small and Medium-Sized Enterprises

(1) Amid the environmental changes at home and abroad in the 1970's, small and medium-sized enterprises staged a satisfactory performance as a whole through a positive response and were able to greatly increase their weight in Japan's economic society.

(2) The greater internationalization expected in the 1980's, changes in the people's conscience and pattern of living, stronger demands for regional promotion and changes in the employment scene will require a greater positive response and effort by small and medium-sized enterprises than in the past.

Meanwhile, the limited production of an array of goods in keeping with the diversified domestic demand, specialization, the progress of the tertiary industry and regional promotional requirements are likely to increase the role of the small and medium-sized enterprises and expand their field of activities.

(3) For Japan's economic society to maintain its vitality and undergo healthy development in the 1980's, the maintenance and development of vigorous small and medium-sized enterprises would be important.

(4) In view of this, efforts will be made to establish an environment in which small and medium-sized enterprises can maintain their vitality and display a creative, individualistic entrepreneur spirit and to render positive support to such entrepreneurs in their independent endeavors. Also, with respect to new issues, a more effective utilization will be planned through a restudy of policies.

11. Perspective of Major Industries and the New Frontier Potentials

Basic Material Industry: Total Systemization and Specialization

(1) Such basic material industry as steel, petrochemical and cement will probably continue to be beset by widespread increases in prices of energy and resources, by changes in the demand structure and a harsh export environment. However, a recovery can be expected in housing construction, livelihood-related social capital investments and private plant investments. Thus, it will be necessary to be able to supply basic materials on a stable basis through the development of new technology and materials conforming to new requirements related to energy, new construction materials for housing, urban redevelopment, disposal and recycling of wastes, oceanic development and continued efforts for improvement of the general distribution capability covering quality, price and delivery capability.

(2) Meanwhile, in keeping up with the advanced state of demands, new elementary materials and special materials with high performance and advanced functions as heat resistance, pressure resistance and corrosion resistance will be developed. Also, there will be greater general technological intensification and higher added values due to total systemization of the production process and energy conservation.

(3) Because of progress achieved by total systemization and energy conservation as described above, there should be a general move in the direction of knowledge intensification, with steel becoming, in a broad sense, quality steel; petrochemical, a speciality chemical; and cement, a speciality cement.

Further, in the plant engineering sector founded on technological capacity developed during plant construction in the period of high growth, activities centered overseas can be anticipated. Also, in this sector over the long-term, it would be essential to push ahead with the development and utilization of energy conservation technology such as direct steel manufacturing to include nuclear steel manufacturing and coal burning NSP kilns to cope with the age of instable energy supply and high prices expected in the 1980's. In addition, there is a need to promote further research and development of C₁ chemical and biomass and the application technology of general coal and heavy grade oil as raw materials.

Steel: Promotion of general technological intensification.

Chemicals: Promotion of measures to insure a stable supply of raw materials and of specialization.

Cement: Energy conservation and efforts to achieve a special quality.

Plate glass: Conversion to float sheet glass.

Copper, lead, zinc: Establishment of a structure to insure stability.

Aluminum: Establishment of an unification structure.

Elementary materials: Group of viable small and medium-sized enterprises.

Processing and Assembly Industry--Conversion Toward Electronic and Software Operations

(1) A vigorous demand can generally be expected in the 1980's for the processing and assembly industry centered on the machinery industry. A segment of the simple labor intensive machinery industry such as home appliances and shipbuilding will probably lose their relative superiority over time in the light of the increasing weight of imports or overseas production.

(2) There will be an increasing shift toward the use of electronics and information in the industrial production process and in such fields as product development, administrative management and in the social sector as medical care, education and the home sector.

(3) New products will be developed through the addition of an information processing capacity, as software, to each product as hardware. Such new practices should become the pillar for future processing and assembly industry. Concretely, advanced durable consumer goods and various machinery integrating information processing capacity such as microprocessors or electronic technology will become the core in domestic and export markets. Energy efficiency will assume a greater importance for these products. At the same time, in the field of semi-conductor elements--the so-called basic elements of equipment--miniturization and intensification will advance, with greater demands emerging.

(4) In capital goods, product development focusing on advanced technology with high added value will come into the spotlight owing to advances in technological development (flexible manufacturing technology), enabling an automated, limited production of an array of products.

(5) In durable consumer goods, the basic direction would be toward the development of merchandise of wide variety and fashions, finely incorporating the needs of consumers.

(6) Such a development of the processing and assembly industry is based on essential assumptions of high quality materials and high performance. It would be important to proceed with elementary material development according to usage and purpose while furthering coordination and cooperative relationship with the elementary material sector.

General machinery: Meet varied needs with technological capacity.

Precision machinery: Shift toward an electronics industry.

Engineering industry: Contribute to developing countries.

Automobiles: Promote electric cars and energy efficient cars.

Electronic and electrical machinery: Promote electronicalization and informationalization of the whole economic society centered on computers.

Livelihood-Related Industries--Products Embodying High Sense and Satisfying Basic Demands

(1) The demand growth for livelihood-related industries such as textiles and daily necessities should be slightly below the total consumption growth. In a segment of the low value added products sector, import substitutes should gradually increase. But as for consumer goods such as apparel, interior decor, furniture and accessories, a growth sector can probably be opened up through product planning embodying fashionable quality and through new product development in response to changing tastes and individuality of consumers.

(2) Meanwhile, it is important to fulfill basic demands by developing products catering to the consumer taste in such functional aspects as durability, simplicity, safety and energy efficiency.

Further, through the development and application of latest technology as electronic technology, efficiency will be sought in the course of designing, dyeing and processing. Even with respect to upstream and midstream sectors dealing with raw materials distribution and processing, renewed progress can be expected through the development of high quality elementary materials or new elementary materials suited for the lower stream.

Textiles: Responding by fashionization.

Paper, pulp: International activities and reinforcement of technological development.

Daily necessities: Responding to a variety of needs.

Housing industry: Bearer of responsibility for improved life.

Leisure-related industry: Development of life of leisure and comfort.

Energy Industry--Establishment of System for Development and Utilization of Alternate Forms of Energy

(1) It is urgent to push forth with development and utilization of alternate forms of energy to replace oil such as nuclear energy, coal, LNP and new energy (geothermal, solar energy, new fuel oil) and diversify the sources of energy. To do so, it would be necessary to establish and strengthen the industrial structure to promote the development and utilization of these alternate forms of energy and plan for their safe and effective utilization.

It is also important to secure a stable supply of oil. There is a need to secure an independent source of supply through a policy on independently developed crude oil and G-G crude and the expansion of D-D crude. Further, it is needed to promote the development and introduction of heavy grade oil diffraction equipment to cope with the heavy grade imported crude and the demand for light crude, and to increase the oil reserves to prepare for any emergency. To do so, a structural improvement would be needed, such as business affiliations and mergers directed at strengthening the physical nature of the oil industry.

(2) The industrial sector for the development of alternate forms of energy to replace oil as new energy is expected to expand, centered on nuclear fuel cycle-related equipment and services such as nuclear power generation equipment, reprocessing and enrichment, on LNG-related facilities and on local energy systems such as the solar system, solar battery, wind power and wave power. Also, with the promotion of energy conservation in the industrial, public welfare and transport sectors, the development of energy conservation-related industry such as insulation materials and low temperature heat recovery pump can be anticipated.

Distribution and Service Industries--Efficiency Due to Greater Capital Formation

(1) The tertiary industry should undergo epochal changes in the 1980's. In other words, because of diverse tastes of consumers, greater hours of leisure and the increase of the aged, many diverse forms of businesses will emerge and management techniques will probably be reformed.

Even in sectors which formerly lacked measures for improvement of productivity through rationalization and mechanization, there will be an industrial-type product flow and services through the introduction of high performance machinery using electronics technology. Also, in the public service sector as education and medical care and in distribution, financing and among trading firms as well, there should be improved productivity and better services due to widespread systemization using the information processing capacity. For this reason, the tertiary industry should take on increasing importance in the national economy with respect to plant investments.

(2) In parallel, business activities formerly associated with the secondary industry have become knowledge intensified, resulting in the growth and independency of indirect sectors such as research and development, engineering, information processing and after-services, thereby paving the way for a new development as the tertiary industry.

In the 1980's, the industrialization of distribution and service industries and the swing to services in the industrial sector should proceed in parallel and provide a mutual stimulus.

Social System Industry--Industrialization and Systemization of Social Services

(1) For the qualitative improvement of the way of life, there is a need to foster efficient social services in both the livelihood-related sector and urban environment-related sector and satisfy various people's needs as medical care, health, education, disposal of waste products and waste heat and transit.

In these social services, efficiency will be achieved by the establishment of a social system applying modern technology such as information processing technology and electronic technology. At the outset, work should commence with the sub-system and slowly advance into the large-scale total system.

(2) For the development, designing, construction, maintenance and management of the social system, it would be essential to call upon the technological accumulations and efficiency of private enterprises. Various rules and systems related to this must be improved, and through needed supportive steps, private enterprises will be made to participate in such social service-rendering business.

With respect to the social system utilizing new technology such as the new transit system, the medical information system and the livelihood information system, there is a need to clarify the vision on development and dissemination and to manifest the industrialization perspectives while planning for coordination with other related fields such as public project plans.

Social system industry: Toward becoming a principal performer in the construction of a welfare society.

Advanced Technology Industry--Reinforcement of Independent, Technological Development Capability

Enormous technology in fields requiring huge research and development investments such as opt-electronics, information processing, semi-conductor elements, new materials, aviation, space development, life sciences, oceanic development and new energy will create new industries themselves, lead future technological progress and form the base for new developments. But Japan's advanced industries are generally lagging in progress and depends to a large degree on technology introduced from outside. For this reason, they must nurture their independent technological development capability through cooperation with government and private circles or through joint international developments.

Information processing industry: Guidance toward an informational society.

Aviation industry: Path toward self-support as a leading industry.

Space industry: Toward practical application in space development.

Oceanic development industry: A new sector for resource development.

Fine ceramics: Development as a new elementary material.

New metals: Base for development of advanced technological sector.

12. From the Opening of Civilization to Its Exploration

Trust in People's Nature For Progress

In any progress, there are external and internal restraints. The former has to do with resource, energy, environment and international relations, while the latter involves the essence of human beings, intellect, behavior and social system. To overcome the difficulties expected in the 1980's and to open up a new era, considerable efforts will probably be needed, but the people's traits should make this possible.

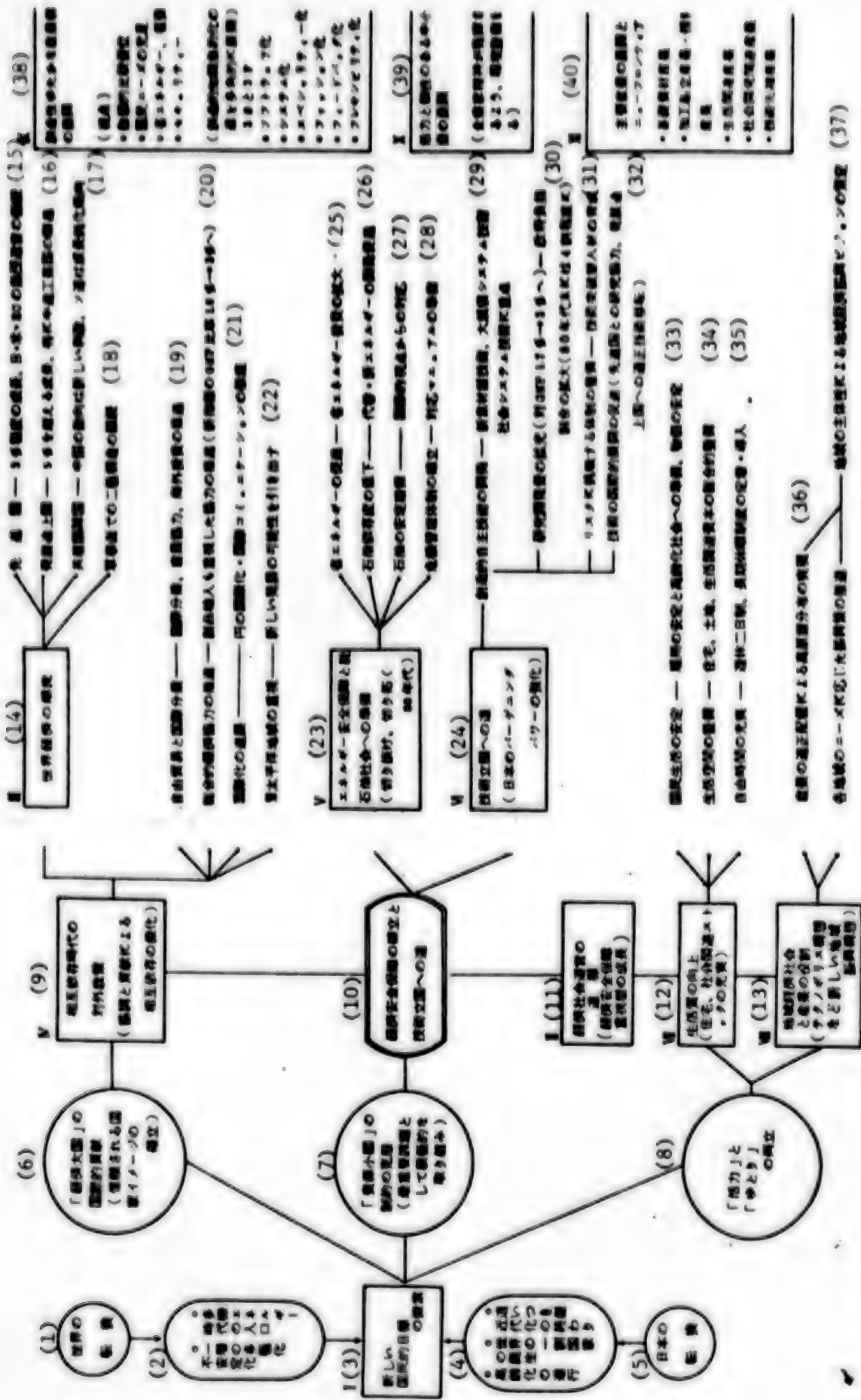
To do so, it calls for the people's awareness about options, such as review of existing systems or practices or differentiating idealism from reality. And much hopes are placed on educational methods promoting creativity, subjectivity and internationality.

Creative Application of Knowledge--Era of Active Application of Knowledge

The "era of opening of civilization," bent on imitating and following others, has come to an end, and the "era of exploration of civilization" characterized by creativity and progress is beginning. The aim is to create an industrial civilization founded on Japan's culture and creative, industrial knowledge intensification, and protect and improve the quality of life, thereby gaining the world's trust.

In an atmosphere likely to become increasingly cloudy, a capacity for perception, judgment and execution will be required more than ever to carve out a true, modern history. The 1980's is an era in which to apply the knowledge in such manner and could be termed as "the era of active application of knowledge."

The 1980's must be a period to "open the way by application of creative knowledge."



[Key on following page]

Key:

1. World Transformation
2. Entry into era of diverse energy
Increased multipolarity and instability
3. Search for new national goal
4. End of catch-up type of modernization
Birth as an integral part of world
Increased of the aged
5. Japan's transformation
6. International contribution of "major economic power" (creation of national image of trust)
7. Overcoming restraints of "minor resource power" (positive study as most important topic)
8. Joint existence of "vitality" and "latitude"
9. External policy in mutual dependence era (deepening mutual dependence through collaboration and contribution)
10. Establishment of economic security and path to technology-oriented country
11. Guidepost to management of economic society (growth of type attaching importance to economic security)
12. Promotion of quality of life (completion of housing and social-related stock)
13. Regional economic society and role of industry (new regional promotion concept such as technopolis concept)
14. Current of Global Economy
15. Leading countries: About 3 percent growth; continued collective management by Japan, U.S. and EC.
16. Developing countries: Growth in excess of 5 percent; notable advance by moderately-growing industrial nations.
17. Communistic bloc: Moves of China poses new stimulus; growth tending to stagnate in USSR.
18. Two-polar military structure to continue.
19. Free trade and international division of labor: Promotion of international division of labor, industrial cooperation and overseas investments.
20. Promotion of general economic cooperation: Promotion of cooperation including emphasis on import of manufactured goods (from 1.6 to 3 percent in ratio of new indicators to GNP).
21. Progress of internationalization: Greater internationalization of yen and international communications.
22. Stress on Pan-Pacific areas: Drawing out potentials for new development.
23. Energy Security and preparing for extricating from oil society (1980s to pull through and explore era)
24. Path to technology-oriented country (strengthening Japan's bargaining power)
25. Promotion of energy conservation: Expansion of energy conservation investments.
26. Decreased dependence on oil: Development and promotion of alternate and new forms of energy.

[Key continued on following page]

27. Stabilization of oil supply: Response from an international standpoint.
28. Establishment of crisis management structure: Preparations of response manual.
29. Development of creative independent technology: Emphasis on new elementary material type technology, large-scale systems technology and social systems technology.
30. Expansion of research and development funds: (from 1.7 to 3 percent against GNP): Increase of government's share (to about 40 percent by end of 1980's).
31. Completion of structure for challenging risks: Training of human resources capable of achieving technological breakthrough.
32. Promotion of international, technological development (cooperation with leading nations on research, proper technology transfer to developing countries)
33. Stabilization of national way of life: Stabilization of employment and preparations for a society of the aged; price stabilization.
34. Adjustments of living space: General adjustment of housing, land and livelihood-related investments.
35. Greater free hours: Introduction and institution of 2-days-off a week system and long-term leave system.
36. Realization of plateau-type distribution through proper deployment of industries.
37. Enhancement of promotion policy to satisfy regional needs-- Creation of regional economic promotion vision according to regional autonomy.
38. Development of highly creative industrial structure:
 [Point of sight]
 Dynamic relative superiority
 Fulfillment of people's needs
 Conservation of energy and resources
 Security
 [Promotion of creative, knowledge intensification in diverse manner]
 3S and 3F
 Softwarization
 Systemization
 Specialization
 Fashionization
 Feedback
 Flexibilization
39. Development of vitalic and individualistic small and medium-sized enterprises
 (Environmental adjustments to be made to enable demonstration of entrepreneurial spirit)

[Key continued on following page]

40. Development of major industries and the new frontier
Basic material industry
Processing and assembly industry; information industry
Livelihood-related industry
Social development-related industry
Advanced technology industry

9097

CSO: 8129/1132D

ECONOMIC

MDC TOP EXECUTIVE HERE ON ATMR PROPOSAL

Tokyo JPE AVIATION REPORT-WEEKLY in English 4 Jun 80 p 2

[Text]

Charles M. Forsyth, Executive Vice President of Douglas Aircraft Co. Div., McDonnell Douglas Corp., was in Tokyo last week and sounded out leaders of the Japanese aircraft industry on Japan's participation in the Advanced Technology Medium Range (ATMR) aircraft development program.

Fokker, Airbus Industrie and Boeing have already approached Japan for possible collaboration in their respective new aircraft projects. Japan plans to begin in or after 1982 development of a 130/160 seat passenger jet coded here as the Y-XX. MDC's proposal to Japan may have sensitive effects on Japanese selection of its partner on the Y-XX market survey expected to be decided in August, sources report.

The ATMR aircraft which Forsyth is proposing for joint development will have accommodations for about 170 passengers. It will be designed to have very low noise levels and improved comfort for passengers.

Compared with Boeing, McDonnell Douglas has had less business relations with Japan as far as commercial products are concerned. The Japanese industry is only participating in a very small portion of the DC-10 production program.

CSO: 4120

ECONOMIC

MITSUBISHI TO EXPAND MAI FACILITIES

Tokyo JPE AVIATION REPORT-WEEKLY in English 4 Jun 80 p 3

[Text]

Mitsubishi Heavy Industries Ltd. (MHI) has decided to expand facilities of its Texas-based subsidiary, Mitsubishi Aircraft International Inc. (MAI) in order to meet increased demand for the MU-2 turboprop and the MU-300 jet business planes. With about ¥500 million, a new hangar will be constructed by September for the MU-300 twinjet business aircraft and the number of employees will be increased by 30 or 40 from the current 250. This is the first time MAI facilities have been expanded since its inception.

MAI has been responsible for major assembly and sales of the MU-2 aircraft which are shipped from MHI in knocked-down form. With sales of the MU-2 constant, it has become necessary for MAI to expand its facilities to begin major assembly of the MU-300. MHI is to start full-scale production of the MU-300 in September, with firm orders for 80 aircraft at present. Further orders are expected to come at a rate of more than six aircraft monthly.

The MU-300 in the US sells for \$2.2 million, a price competitive with that of the Cessna Citation. The price may be changed depending on sales progress.

Total orders for the MU-2 presently stand at 650 aircraft but MAI will shift efforts to major assembly and sales of the MU-300 with expansion of its facilities and sales force.

CSO: 4120

ECONOMIC

SJAC COMMITTEE REVEALS LONG-TERM PLAN FOR INDUSTRY

Tokyo JPE AVIATION REPORT-WEEKLY In English 4 Jun 80 pp 3,4

[Text]

Society of Japanese Aerospace Companies (SJAC) May 23 revealed a report of its long-term planning committee chaired by Prof. Hiroshi Nakaguchi of Chiba University. The committee carried out research on 1) indispensable elements for development of the Japanese aircraft industry and 2) plans the industry should complete by 2000.

As to the indispensable elements for development of the industry, the report pointed out two major elements: 1) maintaining ability to develop advanced technology and 2) retaining ability to carry out development and commercialization of new passenger aircraft either independently or through international collaboration.

As to the plans the industry should materialize by 2000, the report recommended two major items. It noted that the only new commercial aircraft type that will be developed by 2000 will be for accommodation of 100 to 150 passengers. The report predicted introduction of various new aircraft in the late '80s in the form of flyingboats and high-speed turboprop aircraft. Based on these premises, the report recommended that the industry should participate in development of the Y-XX 100-150 passenger jetliner through international collaboration and at the same time should devote efforts for development of flyingboats and such new aircraft.

For development of aircraft for the 21st century, the report emphasized aggressive promotion of basic research as well as studies for application of resultant technology. For these efforts, the report advocated that the government should take the initiative and provide financial aid for, example, establishment of research facilities for joint use by manufacturers.

ECONOMIC

BRIEFS

MHI TO INCREASE EMPLOYEES--Mitsubishi Heavy Industries, Ltd (MHI) plans to transfer more than 100 employees to its Nagoya aircraft manufacturing works from other divisions to cover brisk aircraft production. The Nagoya plant has been very active because of concentrated production of Boeing 767s, F-15s and MU-300 business jets. At the plant, with about 6,000 employees, monthly overtime averages more than 20 hours per worker. The workload is expected to increase from this summer. According to MHI's proposal to its trade union, it intends to move about 55 employees from its Nagoya industrial machinery works and 30 to 35 each from the Nagasaki and Hiroshima shipyards to aircraft manufacture in July for a more-than-four-month stay. This will boost the total of extra personnel at the aircraft works to nearly 550. The industrial machinery operations have some surplus personnel, while the shipyards are faced with work shortages due to inactive ship demand. [Text] [Tokyo JPE AVIATION REPORT-WEEKLY in English 4 Jun 80 pp 2,3]

XJB REPRESENTATION ORGANIZATION--An organization which will represent Japanese industry in the RJ500 engine development program (coded in Japan as the XJB) was inaugurated May 27 within the framework of the Engineering Research Association for Aero-Jet Engines (ERAAE) which was originally established by IHI, KHI and MHI for the purpose of promoting Japan's FJR engine development program, according to MITI sources. Approximately ten people will be assigned to the organization. It will be a temporary one and a new organization, separate from ERAAE, will be established later. A UK-Japan joint venture "Rolls-Royce and Japanese Aero Engines Limited" was inaugurated in early April to promote the RJ 500 program and about 30 Japanese engineers are now in the UK, working with Rolls-Royce personnel. [Text] [Tokyo JPE AVIATION REPORT-WEEKLY in English 4 Jun 80 p 4]

CSO: 4120

SCIENCE AND TECHNOLOGY

MT-X PROGRAM: PROSPECTS, PROBLEMS

Tokyo JPE AVIATION REPORT-WEEKLY in English 4 Jun 80 pp 9,10

[Text]

The ASDF, TR&DI and JDA internal bureaus are coordinating views on the MT-X medium jet trainer development program which they want to include in FY 1981 (April 1981-March 1982) operational plans. Work is now centering on deployment figures, construction of an MT-X training setup, development schedule and other details as the new trainer's mission requirements have already been drafted.

They broadly agree the MT-X will be designed as a multi-mission aircraft to cover towing target drones, high-altitude flight checks, electronic countermeasure training, collecting radioactive dust and liaison missions as well as pilot training. This is because separate development of two aircraft each for medium training and utility missions is considered wasteful. Demand is expected to total about 200 multi-mission aircraft. Deployment is planned to start in FY 1987.

MT-X development and production costs will be studied by the TR&DI after the JDA decides to launch the program in FY 1981 with a deployment figure. In this respect, JDA internal bureaus have demanded the price of the domestically-developed MT-X be near the prices of the British Aerospace Hawk and Alpha Jet trainers, although they basically favor domestic development to boost advancement of defense fundamentals, protection of the aircraft industry and growth of technology. The TR&DI intends to fully meet the demand, estimating development and production costs as part of the overall defense budget. Therefore, license production of foreign aircraft is unlikely.

Selection of prime contractors for the MT-X development program will come after authorization of funds, although some Japanese aircraft manufacturers have presented the TR&DI data for estimating costs.

Meanwhile, the JDA's ongoing review of the 1980-84 MTDP may have some adverse effects on the MT-X program. The review is aimed at completing the MTDP one year ahead of schedule since such government leaders as Prime Minister Masayoshi Ohira and Foreign Minister Saburo Okita have asked the JDA to consider the United States' request for Japan's increased spending. The JDA will give priority to main defense equipment rather than trainers in drafting a defense budget for FY 1981 according to the result of the review. In that case, it might seek a cut in funds for the MT-X program, pointing out the current T-1 and T-33 trainers, though outdated, can continue to perform these missions.

CSO: 4120

END

END OF

FICHE

DATE FILMED

17 July 1980

DD.